

Claims

What is claimed is:

1. A method of providing authentication, said method comprising the steps of:

receiving an identity claim;

5 determining a target discriminant based on the identity claim and on at least one
target model relating to a target individual;

determining a background discriminant based on the identity claim and on at least
one background model relating to at least one background individual;

determining a score based on the target discriminant and the background
10 discriminant; and

accepting or rejecting the identity claim based on the determined score.
2. The method according to Claim 1, wherein said step of determining the
background discriminant comprises providing a background profile and further
determining the background discriminant based on the background profile.

3. The method according to Claim 1, wherein said step of providing a background profile comprises:

determining a permutation matrix;

determining a weight vector; and

5 determining the background profile based on the permutation matrix and the weight vector.

4. The method according to Claim 3, wherein said step of determining the weight vector comprises selecting a weight graph that relates the individual background discriminant functions to at least one characteristic associated with the at least one target
10 voiceprint model.

5. The method according to Claim 3, wherein said step of providing the background profile comprises providing the background profile automatically.

6. The method according to Claim 5, wherein said step of determining the permutation matrix comprises providing the permutation matrix as the identity matrix.

15 7. The method according to Claim 1, further comprising:

providing a plurality of background population models; and

ascertaining individual discriminants in correspondence with each of the
background population models;

said step of determining the background discriminant comprising determining the
5 background discriminant as a function of the individual discriminants.

8. The method according to Claim 7, wherein said step of determining the
background discriminant comprises determining the background discriminant as a
function, of the individual discriminants corresponding to each of the background
population models, that is dependent on at least one characteristic relating to the target
10 individual.

9. A method of providing speech-based authentication, said method comprising
the steps of:

receiving an identity claim;

determining a target discriminant based on the identity claim and on at least one
15 target voiceprint model relating to a target speaker;

determining a background discriminant based on the identity claim and on at least one background voiceprint model relating to at least one background speaker;

determining a score based on the target discriminant and the background discriminant; and

5 accepting or rejecting the identity claim based on the determined score.

10. An apparatus for providing authentication, said apparatus comprising:

a receiving arrangement which receives an identity claim;

a target discriminant generator which determines a target discriminant based on the identity claim and on at least one target model relating to a target individual;

10 a background discriminant generator which determines a background discriminant based on the identity claim and on at least one background model relating to at least one background individual; and

a decision arrangement which determines a score based on the target discriminant and the background discriminant, and accepts or rejects the identity claim based on the
15 determined score.

11. The apparatus according to Claim 10, wherein said background discriminant generator is adapted to provide a background profile and further to determine the background discriminant based on the background profile.

12. The apparatus according to Claim 10, wherein said background discriminant generator is further adapted to:

determine a permutation matrix;

determine a weight vector; and

determine the background profile based on the permutation matrix and the weight vector.

13. The apparatus according to Claim 12, wherein said background discriminant generator is adapted to determine the weight vector via selecting a weight graph that relates the individual background discriminant functions to at least one characteristic associated with the at least one target model.

14. The apparatus according to Claim 12, wherein said background discriminant generator is adapted to provide the background profile automatically.

15. The apparatus according to Claim 14, wherein said background discriminant generator is adapted to provide the permutation matrix as the identity matrix.

16. The apparatus according to Claim 10, wherein:

the at least one background population voiceprint model comprises a plurality of
5 background population models; and

said background discriminant generator is adapted to:

ascertain individual discriminants in correspondence with each of the
background population models; and

determine the background discriminant as a function of the individual
10 discriminants.

17. The apparatus according to Claim 16, wherein said background discriminant generator is further adapted to determine the background discriminant as a function, of the individual discriminants corresponding to each of the background population models, that is dependent on at least one characteristic relating to the target speaker.

15 18. An apparatus for providing speech-based authentication, said apparatus comprising:

a receiving arrangement which receives an identity claim;

a target discriminant generator which determines a target discriminant based on the identity claim and on at least one target voiceprint model relating to a target speaker;

a background discriminant generator which determines a background discriminant
5 based on the identity claim and on at least one background voiceprint model relating to at least one background speaker; and

a decision arrangement which determines a score based on the target discriminant and the background discriminant, and accepts or rejects the identity claim based on the determined score.

10 19. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for providing authentication, said method comprising the steps of:

receiving an identity claim;

determining a target discriminant based on the identity claim and on at least one
15 target voiceprint model relating to a target individual;

